

Release notes for ENDF/B Development n-092_U_232
evaluation



April 26, 2017

- linear Errors:

1. Negative cross section found
0: Neg. Sig(E)

```
Linearize ENDF/B Cross Sections (LINEAR 2015-1)
-----
Retrieval Criteria----- MAT
Monitor Mode----- Off
Minimum Cross Section----- 1.0000E-10 (Default Option)
... [74 more lines]
```

- fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
```

2. Potential scattering hasn't converted, you need more L's!
resonances / resolved (Error # 1): potentialScatteringNotConverged

```
WARNING: Potential scattering hasn't converged by L=0 at E=200.0 eV, xs[0]/xs[0]=100.0% > 0.1%
```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 1.52%
```

4. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 1 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

5. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 2 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [nubar]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (1.496045e-09) is too small
```

6. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 0 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

7. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 3 (total): / Form 'eval': / Component 1 (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

8. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 ($n + U232$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

9. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 4 ($n + U232$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

10. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 ($n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]$): / Form 'eval': / Component 0 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

11. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 8 ($n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission]$): / Form 'eval': / Component 1 (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

12. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 10 ($n + (U232_e2 \rightarrow U232 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (6.679017e-09) is too small

13. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 11 ($n + (U232_e3 \rightarrow U232 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (3.395585e-09) is too small

14. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 12 ($n + (U232_e4 \rightarrow U232 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (4.382923e-09) is too small

15. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.

Section 13 ($n + (U232_e5 \rightarrow U232 + gamma)$): / Form 'eval': (Error # 0): Condition num.

WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

16. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 14 ($n + (U232_e6 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (4.056984e-13) is too small
17. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 15 ($n + (U232_e7 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (2.018197e-11) is too small
18. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 16 ($n + (U232_e8 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (1.137557e-11) is too small
19. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 17 ($n + (U232_e9 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (1.269767e-11) is too small
20. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 18 ($n + (U232_e10 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (2.458332e-11) is too small
21. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 19 ($n + (U232_e11 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (2.585565e-11) is too small
22. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 20 ($n + (U232_e12 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (4.209868e-11) is too small
23. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 21 ($n + (U232_e13 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (3.868534e-11) is too small

24. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 22 ($n + (U232_e14 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (4.912035e-11) is too small
25. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 23 ($n + (U232_e15 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (1.685465e-11) is too small
26. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 24 ($n + (U232_e16 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (1.612813e-10) is too small
27. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 25 ($n + (U232_e17 \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (8.279223e-10) is too small
28. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 26 ($n + (U232_c \rightarrow U232 + \gamma)$): / Form 'eval': (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
29. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 27 ($U233 + \gamma$): / Form 'eval': / Component 0 (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
30. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 27 ($U233 + \gamma$): / Form 'eval': / Component 1 (Error # 0): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
31. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 28 ($n + U232$ [angular distribution]): / Form 'eval': (Error # 1): Condition num.
- WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small

32. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 29 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

33. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 30 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

34. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 31 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

35. The ratio of smallest/largest eigenvalue is quite small, possibly leading to numerical instability in downstream codes.
Section 32 (n[multiplicity:'energyDependent', emissionMode:'prompt'] + n[emissionMode:'6 delayed'] + gamma [total fission] [spectrum]): / Form 'eval': (Error # 0): Condition num.

```
WARNING: Ratio of smallest/largest eigenvalue (0.000000e+00) is too small
```

- **fudge-4.0 Errors:**

1. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (157251.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

2. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (157251.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

```
WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

```
... plus 32 more instances of this message
```

3. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
```

4. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_c / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (300000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
5. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_d / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
6. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_e / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
7. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_f / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (500000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
8. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_g / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
9. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_h / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
10. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_i / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (694215.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
11. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_j / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (915382.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
12. Energy range of data set does not match cross section range

$$\text{reaction label 18: } n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_k / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$$

WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

13. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-l} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
14. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-m} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
15. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-n} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (870560.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
16. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-o} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
17. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-p} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (737753.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
18. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-q} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (694215.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
19. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-r} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (694215.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
20. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-s} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (737753.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
21. Energy range of data set does not match cross section range
 $n + (U232_c \rightarrow U232 + \gamma) / \text{Product: } U232_c / \text{Decay product: } \gamma_{-t} / \text{Multiplicity: (Error \# 0): Domain mismatch (a)}$
- WARNING: Domain doesn't match the cross section domain: (870560.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

22. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_u / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
23. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_v / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (800000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
24. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_w / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (1100000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
25. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_x / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
26. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_y / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (870560.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
27. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_z / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
28. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_aa / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (870560.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
29. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_ab / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)
30. Energy range of data set does not match cross section range
 $reaction\ label\ 18: n + (U232_c \rightarrow U232 + gamma) / Product: U232_c / Decay\ product: gamma_ac / Multiplicity: (Error\ \#0): Domain\ mismatch\ (a)$
- WARNING: Domain doesn't match the cross section domain: (1100000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

31. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_ad / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

32. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_ae / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

33. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_af / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (974900.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

34. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_ag / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (1021270.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

35. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_ah / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (1100000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

36. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_ai / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

37. Energy range of data set does not match cross section range
reaction label 18: n + (U232_c -> U232 + gamma) / Product: U232_c / Decay product: gamma_aj / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (1200000.0 -> 20000000.0) vs (110958.0 -> 20000000.0)

38. Calculated and tabulated Q values disagree.
reaction label 19: n[multiplicity:'2'] + U231 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7122895.813812256 eV vs -7267950. eV!

39. Energy range of data set does not match cross section range
reaction label 19: n[multiplicity:'2'] + U231 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (7299540.0 -> 20000000.0)

40. Energy range of data set does not match cross section range
reaction label 19: n[multiplicity:'2'] + U231 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (7299540.0 -> 20000000.0)
41. Energy range of data set does not match cross section range
reaction label 19: n[multiplicity:'2'] + U231 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (7299540.0 -> 20000000.0)
42. Energy range of data set does not match cross section range
reaction label 19: n[multiplicity:'2'] + U231 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (7500000.0 -> 20000000.0) vs (7299540.0 -> 20000000.0)
43. Calculated and tabulated Q values disagree.
reaction label 20: n[multiplicity:'3'] + U230 + gamma (Error # 0): Q mismatch
- WARNING: Calculated and tabulated Q-values disagree: -13001550.77618408 eV vs -1.31466e7 eV!
44. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_a / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)
45. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_a / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)
46. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_b / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)
47. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_b / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)
48. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_c / Multiplicity: (Error # 0): Domain mismatch (a)
- WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

49. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_c / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

50. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_d / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

51. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_d / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

52. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_e / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

53. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_e / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

54. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_f / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

55. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_f / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

56. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_g / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

57. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_g / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

58. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_h / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

59. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_h / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

60. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_i / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

61. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_i / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14000000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

62. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_j / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

63. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_j / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

64. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_k / Multiplicity: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

65. Energy range of data set does not match cross section range
reaction label 20: n[multiplicity:'3'] + U230 + gamma / Product: gamma_k / Distribution: / uncorrelated - angular - isotropic: (Error # 0): Domain mismatch (a)

WARNING: Domain doesn't match the cross section domain: (14500000.0 -> 20000000.0) vs (13203800.0 -> 20000000.0)

66. Calculated and tabulated Q values disagree.
reaction label 22: U233 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5907148.892608643 eV vs 5762090. eV!

67. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 20: $n + (U232_c \rightarrow U232 + \gamma)$ total gamma multiplicity (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 34.09%
68. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 21: $n[multiplicity:'2'] + U231 + \gamma$ total gamma multiplicity (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 118.72%
69. Multiplicity does not match sum of linked product multiplicities!
 $multiplicitySum$ label 22: $n[multiplicity:'3'] + U230 + \gamma$ total gamma multiplicity (Error # 0): *summedMultiplicityMismatch*
- WARNING: Multiplicity does not match sum of linked product multiplicities! Max diff: 99.98%
70. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 0: $/reactionSuite/fissionComponents/fissionComponent[@label='0']$ (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 217080940056.445 eV vs 1.84584e8 eV!
71. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 1: $/reactionSuite/fissionComponents/fissionComponent[@label='1']$ (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 217080940056.445 eV vs 1.84584e8 eV!
72. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 2: $/reactionSuite/fissionComponents/fissionComponent[@label='2']$ (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 217080940056.445 eV vs 1.84584e8 eV!
73. Calculated and tabulated Q values disagree.
 $fissionComponent$ label 3: $/reactionSuite/fissionComponents/fissionComponent[@label='3']$ (Error # 0): *Q mismatch*
- WARNING: Calculated and tabulated Q-values disagree: 217080940056.445 eV vs 1.84584e8 eV!
74. A covariance matrix was not positive semi-definite, so it has negative eigenvalues.
 $Section\ 28\ (n + U232\ [angular\ distribution]): /Form\ 'eval': /LegendreLValue\ L=1\ vs\ 1$ (Error # 0): *Bad evals*

WARNING: 10 negative eigenvalues! Worst case = -2.663751e-05

- njoy2012 Warnings:

- In some evaluations, the partial fission reactions MT=19, 20, 21, and 38 are given in File 3, but no corresponding distributions are given. In these cases, it is assumed that MT=18 should be used for the fission neutron distributions.
heatr...prompt kerma (0): HEATR/hinit (3)

```
---message from hinit---mt19 has no spectrum  
mt18 spectrum will be used.
```

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

```
---message from hinit---mf6, mt 16 does not give recoil za= 92231  
one-particle recoil approx. used.
```

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

```
---message from hinit---mf6, mt 17 does not give recoil za= 92230  
one-particle recoil approx. used.
```

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

```
---message from hinit---mf6, mt 51 does not give recoil za= 92232  
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

```
---message from hinit---mf6, mt 52 does not give recoil za= 92232  
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

```
---message from hinit---mf6, mt 53 does not give recoil za= 92232  
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

```
---message from hinit---mf6, mt 54 does not give recoil za= 92232  
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

```
---message from hinit---mf6, mt 55 does not give recoil za= 92232  
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

```
---message from hinit---mf6, mt 56 does not give recoil za= 92232  
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)

```
---message from hinit---mf6, mt 57 does not give recoil za= 92232  
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)

```
---message from hinit---mf6, mt 58 does not give recoil za= 92232
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)

```
---message from hinit---mf6, mt 59 does not give recoil za= 92232
one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)

```
---message from hinit---mf6, mt 60 does not give recoil za= 92232
one-particle recoil approx. used.
```

14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)

```
---message from hinit---mf6, mt 61 does not give recoil za= 92232
one-particle recoil approx. used.
```

15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (14): HEATR/hinit (4)

```
---message from hinit---mf6, mt 62 does not give recoil za= 92232
one-particle recoil approx. used.
```

16. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (15): HEATR/hinit (4)

```
---message from hinit---mf6, mt 63 does not give recoil za= 92232
one-particle recoil approx. used.
```

17. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (16): HEATR/hinit (4)

```
---message from hinit---mf6, mt 64 does not give recoil za= 92232
one-particle recoil approx. used.
```

18. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (17): HEATR/hinit (4)

```
---message from hinit---mf6, mt 65 does not give recoil za= 92232
one-particle recoil approx. used.
```

19. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (18): HEATR/hinit (4)

```
---message from hinit---mf6, mt 66 does not give recoil za= 92232
one-particle recoil approx. used.
```

20. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (19): HEATR/hinit (4)

```
---message from hinit---mf6, mt 67 does not give recoil za= 92232
one-particle recoil approx. used.
```

21. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (20): HEATR/hinit (4)

```
---message from hinit---mf6, mt 91 does not give recoil za= 92232
one-particle recoil approx. used.
```

22. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (21): HEATR/hinit (4)

```
---message from hinit---mf6, mt102 does not give recoil za= 92233
photon momentum recoil used.
```

23. There is a problem with the fission energy release.
heatr...prompt kerma (26): HEATR/nheat (3)

```
---message from nheat---changed q from 1.845840E+08 to 1.759630E+08
for mt 18
```

24. Coefficient mismatch of some sort
covr...process covariance data (1): COVR/matshd (2)

```
---message from matshd---processing of mat/mt 9219/ 4 vs. mat1/mt1 9219/ 60
largest coefficient= 6.39643E+00 at index 470 429
```

25. The number of coefficients was too large in a covariance
covr...process covariance data (2): Cov:Too many coeff.

```
---message from matshd--- 121 coefficients > 1
reset and continue.
```

26. The number of coefficients is too big.
covr...process covariance data (3): COVR/matshd (3)

```
---message from matshd--- 43 coefficients > 2
reset and continue
```